

Results for Search Question:

polyurethane and (membrane or filter) and ((gas or oxygen or vapor or water) and plasma)

 Answer
Page

59 answers in [CAplus](#)

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<input type="checkbox"/> 1	Polyurethanes as potential substrates for sub-retinal retinal pigment epithelial cell transplantation [\$4.55]
<input type="checkbox"/> 2	In-vitro hemocompatibility evaluation of a thermoplastic polyurethane membrane with surface-immobilized water-soluble chitosan and heparin [\$4.55]
<input type="checkbox"/> 3	Separations platform based upon electroosmosis-driven planar chromatography [\$4.55]
<input type="checkbox"/> 4	Stable liquid membranes for liquid phase microextraction [\$4.55]
<input type="checkbox"/> 5	Bilayer coating system for an electrically conductive element in a fuel cell [\$4.55]
<input type="checkbox"/> 6	Hollow fiber membrane-type apparatus housed in wettability-improved cylinders for treatment of body fluids and manufacture of the apparatus [\$4.55]
<input type="checkbox"/> 7	Blood compatibility of thermoplastic polyurethane membrane immobilized with water-soluble chitosan/dextran sulfate [\$4.55]
<input type="checkbox"/> 8	Plasma-treated textile surfaces for adsorptive filter materials [\$4.55]
<input type="checkbox"/> 9	On-Line Preconcentration of Cadmium in Commercial Tea Samples using Polyurethane Foam as Filter Associated with Ultrasonic Nebulization-Inductively Coupled Plasma Optical Emission Spectrometric Detection [\$4.55]
<input type="checkbox"/> 10	Trend in pretreatment for atmospheric analysis [\$4.55]
<input type="checkbox"/> 11	Plasma-treated textile surfaces for adsorptive filter materials [\$4.55]
<input type="checkbox"/> 12	Rolled electrode array and its method for manufacture [\$4.55]
<input type="checkbox"/> 13	Fuel cell component with lyophilic surface [\$4.55]
<input type="checkbox"/> 14	Antithrombogenic medical compositions having controlled static contact angle, medical materials containing them, and medical goods containing the materials [\$4.55]
<input type="checkbox"/> 15	Hollow fibre gas separation membranes [\$4.55]
<input type="checkbox"/> 16	Robust ultra-low k interconnect structures using bridge-then-metalization fabrication sequence [\$4.55]
<input type="checkbox"/> 17	Method for producing uv absorption layers on substrates [\$4.55]
<input type="checkbox"/> 18	Integrated container for lyophilization, rehydration and processing of biological materials [\$4.55]
<input type="checkbox"/> 19	Selective deleukocytation unit with filter and adsorber for preparing a platelet product [\$4.55]

<input type="checkbox"/> 20	Method and apparatus for separating blood components [\$4.55]
<input type="checkbox"/> 21	Controlled release formulation of lamotrigine [\$4.55]
<input type="checkbox"/> 22	Plasma technology. Modern method for modification of polymer surfaces [\$4.55]
<input type="checkbox"/> 23	Fluidized bed activated by excimer plasma and materials produced therefrom [\$4.55]
<input type="checkbox"/> 24	Oxygen plasma modification of polyurethane membranes [\$4.55]
<input type="checkbox"/> 25	Polymer grafting for enhancement of biofunctional properties of medical and prosthetic surfaces [\$4.55]
<input type="checkbox"/> 26	A new amperometric glucose microsensor: in vitro and short-term in vivo evaluation [\$4.55]
<input type="checkbox"/> 27	Characteristics of PM2.5 particles and PAHs in two urban areas of Korea [\$4.55]
<input type="checkbox"/> 28	Non-porous membrane for MALDI-TOFMS analysis of peptides and proteins [\$4.55]
<input type="checkbox"/> 29	Adsorption of blood proteins on glow-discharge-modified polyurethane membranes [\$4.55]
<input type="checkbox"/> 30	Evaluation of a whole-blood WBC-reduction filter that saves platelets: In vitro studies [\$4.55]
<input type="checkbox"/> 31	Cell culture systems and methods for organ assist devices using membranes that are gas-permeable and liquid-impermeable [\$4.55]
<input type="checkbox"/> 32	Derivatized porous silicon in biomaterial [\$4.55]
<input type="checkbox"/> 33	Plasma-deposited membranes for controlled release of antibiotic to prevent bacterial adhesion and biofilm formation [\$4.55]
<input type="checkbox"/> 34	Mucin coating on polymeric material surfaces to suppress bacterial adhesion [\$4.55]
<input type="checkbox"/> 35	Microneedle devices and methods of manufacture and use for transport of therapeutics across tissue barriers without damage [\$4.55]
<input type="checkbox"/> 36	Methods of measuring analytes with barrier webs [\$4.55]
<input type="checkbox"/> 37	Methods and devices for mass transport assisted optical assays [\$4.55]
<input type="checkbox"/> 38	Effect of top layer swelling on the oxygen/nitrogen separation by surface modified polyurethane membranes [\$4.55]
<input type="checkbox"/> 39	Pervaporation of water-ethanol mixtures through plasma graft polymerization of polar monomer onto crosslinked polyurethane membrane [\$4.55]
<input type="checkbox"/> 40	Refunctionalized oxyfluorinated surfaces [\$4.55]
<input type="checkbox"/> 41	Air and biological monitoring of toluene diisocyanate in a flexible foam plant [\$4.55]
<input type="checkbox"/> 42	Biomarkers in hydrolyzed urine, plasma and erythrocytes among workers exposed to thermal degradation products from toluene diisocyanate foam [\$4.55]
<input type="checkbox"/> 43	Improved blood compatibility of segmented polyurethanes by polymeric additives having phospholipid polar groups. I. Molecular design of polymeric additives and their functions [\$4.55]
<input type="checkbox"/> 44	Compositions for two-component polyurethane adhesive, sealing, and binding agents for hollow fibers [\$4.55]
<input type="checkbox"/> 45	Introduction of functional groups on the surface of polyurethane membranes [\$4.55]
<input type="checkbox"/> 46	Preparation of antithrombotic peptides and medical instruments with the peptides immobilized on the surface [\$4.55]
<input type="checkbox"/> 47	Synthesis of phospholipid polymers having a urethane bond in the side chain as coating material on segmented polyurethane and their platelet adhesion-resistant properties [\$4.55]
<input type="checkbox"/> 48	Plasma graft polymerization of acrylamide onto crosslinked HTPB based PU membrane for pervaporation [\$4.55]
<input type="checkbox"/> 49	Enzymic glucose sensors. Improved long-term performance in vitro and in vivo [\$4.55]

<input type="checkbox"/> 50	Comparison of surface modification of polymers by different methods [\$4.55]
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[Page 1] [2] [3] [Next]

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Page

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<input type="checkbox"/> 51	Cell attachment to PU and PHEMA based biomaterials: relation to structural properties [\$4.55]
<input type="checkbox"/> 52	Surface modification of biomaterials with plasma glow discharge processes [\$4.55]
<input type="checkbox"/> 53	Permeable membranes with good blood compatibility [\$4.55]
<input type="checkbox"/> 54	Intraocular lenses with surface active membrane [\$4.55]
<input type="checkbox"/> 55	Polyurethane gas-permeable membranes with good blood compatibility [\$4.55]
<input type="checkbox"/> 56	Biphase-type polyurethane binder and hollow-fiber liquid separation apparatus containing it for medical separations [\$4.55]
<input type="checkbox"/> 57	Interface effect on gas permeability of multilayer polymer materials [\$4.55]
<input type="checkbox"/> 58	Production of immobilized cell membrane . [\$4.55]
<input type="checkbox"/> 59	Modification of gas permeabilities of polymer membranes by plasma coating [\$4.55]
	Titles from CEABA-VTB in Most Recent Order
<input type="checkbox"/> 60	Pervaporation of water -ethanol mixtures through plasma graft polymerization of polar monomer onto crosslinked polyurethane membrane [\$3.56]
	Titles from COMPENDEX in Most Recent Order Best Match Order
<input type="checkbox"/> 61	Polyurethanes as potential substrates for sub-retinal retinal pigment epithelial cell transplantation. [\$3.36]
<input type="checkbox"/> 62	In-vitro hemocompatibility evaluation of a thermoplastic polyurethane membrane with surface-immobilized water -soluble chitosan and heparin. [\$3.36]
<input type="checkbox"/> 63	Blood compatibility of thermoplastic polyurethane membrane immobilized with water -soluble chitosan/dextran sulfate. [\$3.36]
<input type="checkbox"/> 64	On-line preconcentration of cadmium in commercial tea samples using polyurethane foam as filter associated with ultrasonic nebulization-inductively coupled plasma optical emission spectrometric detection. [\$3.36]
<input type="checkbox"/> 65	Adsorption of blood proteins on glow-discharge-modified polyurethane membranes . [\$3.36]
<input type="checkbox"/> 66	Pervaporation of water -ethanol mixtures through plasma graft polymerization of polar monomer onto crosslinked polyurethane membrane . [\$3.36]
<input type="checkbox"/> 67	Improved blood compatibility of segmented polyurethanes by polymeric additives having

	phospholipid polar groups. I. Molecular design of polymeric additives and their functions. [\$3.36]
<input type="checkbox"/> 68	Synthesis of phospholipid polymers having a urethane bond in the side chain as coating material on segmented polyurethane and their platelet adhesion-resistant properties. [\$3.36]
<input type="checkbox"/> 69	Enzymatic glucose sensors improved long-term performance in vitro and in vivo. [\$3.36]
<input type="checkbox"/> 70	POTENTIALLY-IMPLANTABLE, FERROCENE-MEDIATED GLUCOSE SENSOR. [\$3.36]
	Titles from JICST-EPLUS in Most Recent Order Best Match Order
<input type="checkbox"/> 71	Functionality of Amorphous Hydrogenated Carbon (a-C:H) Film Coatings for an Artificial Heart [\$2.30]
<input type="checkbox"/> 72	Invention of the Composite Material Using Low-Temperature Plasma . [\$2.30]
<input type="checkbox"/> 73	Application of DLC Film to Biomaterials. [\$2.30]
<input type="checkbox"/> 74	Phospholipid Membranes. (262). Synthesis and the Properties of Segmented Polyurethanes Grafted Both Methacrylate Containing Hydrophilic Group of Phosphatidylcholine and various Methacrylate. [\$2.30]
<input type="checkbox"/> 75	Phospholipid Membranes. (260). Synthesis and the Antithrombogenicity of Segmented Polyurethanes Grafted Both Methacrylate Containing Hydrophilic Group of Phosphatidylcholine and Long-chain Alkyl Methacrylate. [\$2.30]
<input type="checkbox"/> 76	Glycolipid Membranes. (19). A Novel blood compatible GEMA-grafted segmented polyurethane . [\$2.30]
<input type="checkbox"/> 77	Glicolipid Membrane. (18). Syntheses and Antithrombogenicity of Segmented Polyurethanes Containing Sulufated Gulucose. [\$2.30]
<input type="checkbox"/> 78	Membrane Phospholipids. (263). Synthesis and blood compatibility of a new grafted polyurethane contain phosphorylcholine groups. [\$2.30]
<input type="checkbox"/> 79	Synthesis of Novel Blood Compatible Polymeric Additives and Modification of Biomedical Materials. [\$2.30]
<input type="checkbox"/> 80	A Study on Plasma Treatment for Different Polymer Compositions of Bumpers. Application of Plasma Treatment Previous to Bumper Painting. [\$2.30]
<input type="checkbox"/> 81	Function enhancement and surface modification of powder.(76).Surface modification and leucocyte adhesive strength by plasma treatment of polyurethane . [\$2.30]
<input type="checkbox"/> 82	Application of low temperature plasma to the fabric and the electric material. [\$2.30]
<input type="checkbox"/> 83	Officials and people cooperation project research reports.Human science basic research business in fiscal year 1990.Research on evaluation, improvement and developmental technology of medical materials as the basis of two fields including medical treatment and welfare service.(Sponsor : Human science promotion foundation). [\$2.30]
<input type="checkbox"/> 84	Special issue : optical technology using a polymer.The application of a polymer to optical waveguide. [\$2.30]
<input type="checkbox"/> 85	Aplication of low temperature plasma polymerization to the polyester textile. [\$2.30]
<input type="checkbox"/> 86	Abration-resistant coatings for plastics. [\$2.30]
	Titles from PASCAL in Most Recent Order Best Match Order
<input type="checkbox"/> 87	In-vitro hemocompatibility evaluation of a thermoplastic polyurethane membrane with surface-immobilized water-soluble chitosan and heparin [\$3.20]
<input type="checkbox"/> 88	A new amperometric glucose microsensor: in vitro and short-term in vivo evaluation [\$3.20]
<input type="checkbox"/> 89	Adsorption of blood proteins on glow-discharge-modified polyurethane membranes [\$3.20]
<input type="checkbox"/> 90	Effect of top layer swelling on the oxygen/nitrogen separation by surface modified polyurethane membranes [\$3.20]
<input type="checkbox"/> 91	Pervaporation of water-ethanol mixtures through plasma graft polymerization of polar monomer onto crosslinked polyurethane membrane [\$3.20]

<input type="checkbox"/> 92	Biomarkers in hydrolysed urine, plasma and erythrocytes among workers exposed to thermal degradation products from toluene diisocyanate foam [\$3.20]
<input type="checkbox"/> 93	Improved blood compatibility of segmented polyurethanes by polymeric additives having phospholipid polar groups. I. Molecular design of polymeric additives and their functions [\$3.20]
<input type="checkbox"/> 94	Synthesis of phospholipid polymers having a urethane bond in the side chain as coating material on segmented polyurethane and their platelet adhesion-resistant properties [\$3.20]
<input type="checkbox"/> 95	In vitro leukocyte adhesion to modified polyurethane surfaces. II: Effect of wettability [\$3.20]
<input type="checkbox"/> 96	Newborn extracorporeal lung assist using a novel double lumen catheter and a heparin-bonded membrane lung [\$3.20]
Titles from SCISEARCH in Most Recent Order Best Match Order	
<input type="checkbox"/> 97	Polyurethanes as potential substrates for sub-retinal retinal pigment epithelial cell transplantation [\$7.25]
<input type="checkbox"/> 98	In-vitro hemocompatibility evaluation of a thermoplastic polyurethane membrane with surface-immobilized water-soluble chitosan and heparin [\$7.25]
<input type="checkbox"/> 99	Improvement of polyurethane surface biocompatibility by plasma and ton beam techniques [\$7.25]
<input type="checkbox"/> 100	On-line preconcentration/determination of lead in <i>Ilex paraguariensis</i> samples (mate tea) using polyurethane foam as filter and USN-ICP-OES [\$7.25]

[Prev] [1] [Page 2] [3] [Next]

Display Selection Selected on all pages ▼ Display Format Standard Plus ▼ Display Style STNEasy ▼

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 Answer
Page

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<input type="checkbox"/> 101	Blood compatibility of thermoplastic polyurethane membrane immobilized with water-soluble chitosan/dextran sulfate [\$7.25]
<input type="checkbox"/> 102	On-line preconcentration of cadmium in commercial tea samples using polyurethane foam as filter associated with ultrasonic nebulization-inductively coupled plasma optical emission spectrometric detection [\$7.25]
<input type="checkbox"/> 103	Clotting times and tensile properties of insoluble silk fibroin films containing heparin [\$7.25]
<input type="checkbox"/> 104	Hemocompatibility and anaphylatoxin formation of protein-immobilizing polyacrylonitrile hemodialysis membrane [\$7.25]
<input type="checkbox"/> 105	Chemical graft polymerization of sulfobetaine monomer on polyurethane surface for reduction in platelet adhesion [\$7.25]
<input type="checkbox"/> 106	Blood compatibility of polyurethane surface grafted copolymerization with sulfobetaine monomer [\$7.25]
<input type="checkbox"/> 107	Plasma-induced graft co-polymerization of acrylic acid onto the polyurethane surface [\$7.25]
<input type="checkbox"/> 108	Hemocompatibility of polyacrylonitrile dialysis membrane immobilized with chitosan and heparin conjugate [\$7.25]
<input type="checkbox"/> 109	Surface properties and in vitro analyses of immobilized chitosan onto polypropylene nonwoven fabric surface using antenna-coupling microwave plasma [\$7.25]
<input type="checkbox"/> 110	Protein adsorption and platelet adhesion of polysulfone membrane immobilized with chitosan and heparin conjugate [\$7.25]
<input type="checkbox"/> 111	The grafting of chitosan oligomer to polysulfone membrane via ozone-treatment and its effect on anti-bacterial activity [\$7.25]
<input type="checkbox"/> 112	Anticoagulant activity of immobilized heparin on the polypropylene nonwoven fabric surface depending upon the pH of processing environment [\$7.25]
<input type="checkbox"/> 113	Oxygen plasma modification of polyurethane membranes [\$7.25]
<input type="checkbox"/> 114	Optimum conditions for the surface modification of polyurethane by oxygen plasma treatment [\$7.25]
<input type="checkbox"/> 115	A new amperometric glucose microsensor: in vitro and short-term in vivo evaluation [\$7.25]
<input type="checkbox"/> 116	Adsorption of blood proteins on glow-discharge-modified polyurethane membranes [\$7.25]
<input type="checkbox"/> 117	Exposure to 4,4 '-methylenediphenyl diisocyanate (MDI) during moulding of rigid polyurethane foam: determination of airborne MDI and urinary 4,4 '-methylenedianiline (MDA) [\$7.25]

<input type="checkbox"/> 118	Preparation and characterization of cell compatible polyurethane [\$7.25]
<input type="checkbox"/> 119	Surface photo-grafting of polyurethane with 2-hydroxyethyl acrylate for promotion of human endothelial cell adhesion and growth [\$7.25]
<input type="checkbox"/> 120	Mucin coating on polymeric material surfaces to suppress bacterial adhesion [\$7.25]
<input type="checkbox"/> 121	A study of the effect of proteins and endogenous cations on a lipophilic beta-cyclodextrin-based potentiometric lidocaine sensor using discrete solution and flow-injection analysis [\$7.25]
<input type="checkbox"/> 122	Behavior of blood cells in contact with water-soluble phospholipid polymer [\$7.25]
<input type="checkbox"/> 123	Effect of top layer swelling on the oxygen/nitrogen separation by surface modified polyurethane membranes [\$7.25]
<input type="checkbox"/> 124	Pervaporation of water-ethanol mixtures through plasma graft polymerization of polar monomer onto crosslinked polyurethane membrane [\$7.25]
<input type="checkbox"/> 125	Air and biological monitoring of toluene diisocyanate in a flexible foam plant [\$7.25]
<input type="checkbox"/> 126	Biomarkers in hydrolysed urine, plasma and erythrocytes among workers exposed to thermal degradation products from toluene diisocyanate foam [\$7.25]
<input type="checkbox"/> 127	Effect of reduced protein adsorption on platelet adhesion at the phospholipid polymer surfaces [\$7.25]
<input type="checkbox"/> 128	Improved blood compatibility of segmented polyurethanes by polymeric additives having phospholipid polar groups . 1. Molecular design of polymeric additives and their functions [\$7.25]
<input type="checkbox"/> 129	Introduction of functional groups on the surface of polyurethane membranes [\$7.25]
<input type="checkbox"/> 130	SYNTHESIS OF PHOSPHOLIPID POLYMERS HAVING A METHANE BOND IN THE SIDE-CHAIN AS COATING MATERIAL ON SEGMENTED POLYURETHANE AND THEIR PLATELET ADHESION-RESISTANT PROPERTIES [\$7.25]
<input type="checkbox"/> 131	COLUMN SOLID-PHASE EXTRACTION AS PRECONCENTRATION METHOD FOR TRACE-ELEMENT DETERMINATION IN OXALIC-ACID BY ATOMIC-ABSORPTION SPECTROMETRY AND INDUCTIVELY-COUPLED PLASMA-ATOMIC EMISSION-SPECTROMETRY [\$7.25]
<input type="checkbox"/> 132	NEWBORN EXTRACORPOREAL LUNG ASSIST USING A NOVEL DOUBLE LUMEN CATHETER AND A HEPARIN-BONDED MEMBRANE LUNG [\$7.25]

[Prev] [1] [2] [Page 3]

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[← Previous answer \[\\$4.55\]](#) | [Next answer \[\\$4.55\] →](#)**ANSWER 19 © 2006 ACS on STN**[Find documents citing this reference \[\\$2.00\]](#)[CAS indexed 3 chemical substances from this document. \[\\$2.00\]](#)**Title**Selective deleukocytation unit with **filter** and adsorber for preparing a platelet product**Inventor Name**

Verpoort, Thierry; Chollet, Stephane

Patent Assignee

Fr.

Publication Source

U.S. Pat. Appl. Publ., 10 pp.

Identifier-CODEN

USXXCO

Patent Information

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004007540	A1	20040115	US 2003-616368	20030709
FR 2842122	A1	20040116	FR 2002-8687	20020710
FR 2842122	B1	20040813		
EP 1382361	A1	20040121	EP 2003-291430	20030613
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
AU 2003204942	A1	20040129	AU 2003-204942	20030625
JP 2004130085	A2	20040430	JP 2003-194229	20030709
CA 2434951	AA	20040110	CA 2003-2434951	20030710

Priority Application Information

FR 2002-8687 A 20020710

Abstract

The invention includes a filtration unit for the selective deleukocytation of a fluid contg. blood platelets such as blood or a blood component. The unit includes a medium for deleukocytation by adsorption and/or filtration of the leukocytes. The medium is formed by at least one layer of non-woven **polyurethane** fabric which has been treated by **gas plasma**. The invention also includes bag systems contg. such a unit, including closed filtration systems.

International Patent Classification, Main

B01D037-00

International Patent Classification, Secondary

B01D039-08; B01D029-00

INCL 210767000; 210650000; 210503000; 210507000; 210435000; 210488000; 210489000; 604406000; 604408000

IPC Initial Classification

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Display from COMPENDEX

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Title

Adsorption of blood proteins on glow-discharge-modified polyurethane membranes.

Author

Kayirhan, N. (Middle East Technical University Dept. of Polymer Sci. and Technology, 06242, Ankara, Turkey); Denizli, A.; Hasirci, N.

Publication Source

Journal of Applied Polymer Science v 81 n 6 Aug 8 2001 2001.p 1322-1332

CODEN: JAPNAB ISSN: 0021-8995

Publication Year

2001

Document Type

Journal

Treatment Code

Experimental

Language

English

Abstract

Polyurethanes are a class of polymers that have a wide range of applications in the medical field although their blood compatibility still needs improvement. In order to obtain medical purity, this study prepared **membrane-form polyurethanes** from toluene 2,4-diisocyanate (TDI) and poly(propylene ethylene glycol) without the addition of any ingredients such as solvents, catalysts, or chain extenders. The aim was to increase surface hydrophilicity and improve blood compatibility. Therefore, the prepared **membranes** were modified by treatment with **oxygen** or argon **plasmas**. Characterizations of the samples were achieved by contact-angle and **water**-uptake studies as well as from atomic force microscope (AFM) pictures. It was found that **oxygen**-modified samples were more hydrophilic than argon-modified samples. The AFM images showed that surface roughness increased with **plasma** treatment. The protein adsorption experiments carried out with single protein solutions demonstrated that the adsorption of bovine serum albumin and fibrinogen decreased drastically by increasing the applied power and exposure time of the glow discharge. A similar decrease in the adsorption of protein was also observed for human blood proteins. The alterations of the conformational structures of the adsorbed proteins were examined by fluorescence spectrophotometry. Similar spectra with the same maximum wavelength were observed for native and desorbed proteins. These results showed that no denaturation of the proteins occurred upon adsorption on the surfaces of the prepared **membranes**. 25 Refs.

Classification Code

817.1 Plastics Products; 815.1.1 Organic Polymers; 804.1 Organic Components; 461.2 Biological Materials; 801.2 Biochemistry; 802.3 Chemical Operations

Controlled Term

[Display without Links](#) | [Return to Results](#)

Display Page

Display from CPlus

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Title

Adsorption of blood proteins on glow-discharge-modified **polyurethane membranes**

Author

Kayirhan, Nesrin; Denizli, Adil; Hasirci, Nesrin

Organization

Department of Polymer Science and Technology, Middle East Technical University, Ankara, Turk.

Publication Source

Journal of Applied Polymer Science (2001), 81(6), 1322-1332

Identifier-CODEN

JAPNAB

ISSN

0021-8995

Publisher

John Wiley & Sons, Inc.

Abstract

Polyurethanes are a class of polymers that have a wide range of applications in the medical field although their blood compatibility still needs improvement. To obtain medical purity, this study prepd. **membrane-form polyurethanes** from toluene 2,4-diisocyanate (TDI) and poly(propylene ethylene glycol) without the addn. of any ingredients such as solvents, catalysts, or chain extenders. The aim was to increase surface hydrophilicity and improve blood compatibility. Therefore, the prepd. **membranes** were modified by treatment with O₂ or Ar **plasmas**. Characterizations of the samples were achieved by contact-angle and water-uptake studies as well as from at. force microscope (AFM) pictures. It was found that O₂-modified samples were more hydrophilic than Ar-modified samples. The AFM images showed that surface roughness increased with **plasma** treatment. The protein adsorption expts. carried out with single protein solns. demonstrated that the adsorption of bovine serum albumin and fibrinogen decreased drastically by increasing the applied power and exposure time of the glow discharge. A similar decrease in the adsorption of protein was also obsd. for human blood proteins. The alterations of the conformational structures of the adsorbed proteins were examd. by fluorescence spectrophotometry. Similar spectra with the same max. wavelength were obsd. for native and desorbed proteins. These results showed that no denaturation of the proteins occurred upon adsorption on the surfaces of the prepd. **membranes**.

Document Type

Journal

Language

English

Supplementary Indexing

[Display without Links](#) | [Return to Results](#)

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Title

Oxygen plasma modification of polyurethane membranes

Author

Ozdemir, Yesim; Hasirci, Nesrin; Serbetci, Kemal

Organization

Faculty of Arts and Sciences, Department of Chemistry, Middle East Technical University, Ankara, 06531, Turk.

Publication Source

Journal of Materials Science: Materials in Medicine (2002), 13(12), 1147-1152

Identifier-CODEN

JSMMEI

ISSN

0957-4530

Publisher

Kluwer Academic Publishers

Abstract

Polyurethane membranes were prep'd. under nitrogen atm. by using various proportions of toluene diisocyanates (TDI) and polypropylene-ethylene glycol (P) with addn. of no other ingredients such as catalysts, initiator or solvent in order to achieve medical purity. Effects of compn. on mech. properties were exam'd. In general, modulus and UTS values demonstrated an increase and PSBR demonstrated a decrease as the TDI/Polyol ratio of the polymer increased. Elastic modulus, ultimate tensile strength (UTS) and per cent strain before rupture (PSBR) values were found to be in the range of 1.4-5.4 MPa, 0.9-1.9 MPa, and 60.4-99.7%, resp. Surfaces of the **membranes** were modified by **oxygen plasma** applying glow-discharge technique and the effect of applied **plasma** power (10 W or 100 W, 15 min) on surface hydrophilicity and on the attachment of Vero cells were studied. **Water** contact angle values of the **plasma** modified surfaces varied between 67° and 46°, demonstrating a decrease as the applied **plasma** power was increased. The unmodified material had 42-45 cells attached per cm². It was obs'd. that as the applied power increased the no. of attached cells first increased (60-70 cells/cm² at 10 W) and then decreased (27-40 cells/cm² at 100 W). These demonstrated that surface properties of **polyurethanes** can be modified by **plasma**-glow discharge technique to achieve the optimum levels of cell attachment.

Document Type

Journal

Language

English

Supplementary Indexing

*

[Display without Links](#) | [Return to Results](#)

Display Page

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Title

Introduction of functional groups on the surface of **polyurethane membranes**

Author

Kim, Eun-Jin; Kim, Jong-Mok; Cho, Ur-Ryong; Lim, Hak-Sang; Kang, Inn-Kyu

Organization

Dep. Polymer Sci., Kyungpook Natl. Univ., S. Korea

Publication Source

Pollimo (1996), 20(3), 514-521

Identifier-CODEN

POLLDG

ISSN

0379-153X

Publisher

Polymer Society of Korea

Abstract

Polyurethane prepolymer was synthesized from poly(tetramethylene glycol) (PTMG) and 4,4'-diphenylmethane diisocyanate (MDI), and reacted with ethylene diamine to obtain **polyurethane** (PU). PU films were treated with **oxygen plasma** glow discharge to produce peroxides on the surface and then initiated graft polymn. of 1-acryloyl benzotriazole (AB). The concn. of AB grafted on the surfaces, measured by UV spectroscopy, was 1.22 $\mu\text{mol}/\text{cm}^2$. The functional groups such as hydroxyl (-OH), amine (-NH₂), carboxylic acid (-COOH), and sulfonic acid (-SO₃H) were introduced on the PU surfaces by substitution reaction with AB and the concn. of functional groups were in the range of 0.53-0.56 $\mu\text{mol}/\text{cm}^2$. The surfaces of functional group-contg. PUs were examd. by attenuated total reflection Fourier transform IR (ATR-FT-IR) and electron spectroscopy for chem. anal. (ESCA). The **water** contact angles of the surface-modified PU films was increased by the introduction of functional groups.

Document Type

Journal

Language

Korean

Supplementary Indexing

polyurethane membrane surface introduction functional group; hydroxyl introduction **polyurethane membrane** surface; amino introduction **polyurethane membrane** surface; carboxylic acid introduction **polyurethane membrane** surface; sulfonic acid introduction **polyurethane membrane** surface

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Title

Optimum conditions for the surface modification of **polyurethane** by **oxygen plasma** treatment

Author

Zhang Y; Myung S W; Choi H S (Reprint); Kim I H; Choi J H

Organization

Chungnam Natl Univ, Dept Chem Engr, Taejon 305764, South Korea (Reprint); Urecel Technol Co Ltd, Kongdo 456820, Ansong, South Korea

Publication Source

JOURNAL OF INDUSTRIAL AND ENGINEERING CHEMISTRY, (MAY 2002) Vol. 8, No. 3, pp. 236-240.
ISSN: 1226-086X.

Document Type

Article; Journal

Abstract

Polyurethane film made by (TDI) was treated by **oxygen plasma**. After treatment, **polyurethane** film was exposed to the air to generate peroxide. The amount of peroxides formed on the **polyurethane** film decreased after passing a maximum at about 3)0 sec of exposure under the **plasma** condition of 100 W and 200 mtorr. An optimum glow discharge power for a maximum peroxide concentration turned out to be 100 W at the **plasma** exposure time of 30 sec and the pressure of 200 mtorr. The density of peroxide radicals increased with pressure up to 250 mtorr and thereafter decreased. We finally obtained the optimum **plasma** condition of 100 W, 250 mtorr, 30 sec for a maximum peroxide concentration of 1.984 nmol/cm(2) on the **polyurethane** surface.

Supplementary Indexing

Author Keywords: **oxygen plasma**; **polyurethane**; peroxide

KeyWords Plus (R): GLOW-DISCHARGE; PERMEATION; **MEMBRANE**; GRAFT

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